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ISSN 0097-4463

ANNALS of CARNEGIE MUSEUM

CARNEGIE MUSEUM OF NATURAL HISTORY

4400 FORBES AVENUE • PITTSBURGH, PENNSYLVANIA 15213

VOLUME 54

6 DECEMBER 1985

ARTICLE 12

THE LOWER MISSISSIPPIAN BRACHIOPOD GENUS *PUNCTOTHYRIS* HYDE IS NOT ENDOPUNCTATE

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ABSTRACT

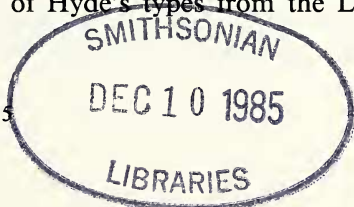
Reexamination of the type specimens of *Punctothyris argus* Hyde shows that the so-called punctae described by Hyde in his original description of the genus are molds of inner extensions of very small hollow papillae or spinules. These hollow "punctae" terminate within the secondary or fibrous shell layer and thus are not endopunctae. The genus *Punctothyris* is rediagnosed and assigned to a new reticulariacean family, the Gerkispiridae. *Spirifer schucherti* Rowley is redescribed and assigned to *Punctothyris* and two new species of this genus are described, *P. kenwoodensis* from the St. Joe Limestone of northeastern Oklahoma, and *P. inusitata* from the Chouteau Limestone of northeastern Missouri.

INTRODUCTION

In his monographic treatment of the invertebrate faunas of the Logan and associated formations of the Waverly Group of east-central Ohio, Jesse Hyde (1953:287–289) described an unusual and enigmatic genus of spiriferoid brachiopods to which he applied the name *Punctothyris*. His brief description follows: "Shell spiriferoid, punctate, with much reduced, but distinct dental lamellae and with no median septum." Because punctate spiriferids lacking a median septum are so unusual, it is not surprising that other workers have failed to cite this genus in the literature. Difficulty in recognizing the genus has been further compounded by the poor preservation of Hyde's types from the Logan

Submitted 7 March 1985.

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Formation and the fact that Hyde failed to illustrate any specimens of his new genus with photographs.

Pitrat, in the Treatise on Invertebrate Paleontology (1965:H714), assigned *Punctothyris* to the punctate family Spiriferinidae with a query and the parenthetic caveat that Hyde's ". . . punctae may be merely spine bases, in which case *Punctothyris* should be reassigned to the Spiriferidae." Pitrat's suspicion concerning the nature of the "punctae" was well founded.

My original interest in this genus came about after I had successfully sectioned a silicified chert-filled specimen of *Spirifer schucherti* Rowley from the collections of the University of Illinois. Although very small and with somewhat different proportions than *P. argus* Hyde, it was very similar to that species externally and internally except in one important aspect—it was seemingly not punctate (although all other endopunctate silicified species in the white chert fauna gave some clear indication of punctae). This, taken with Pitrat's suspicion concerning the nature of Hyde's "punctae," prompted me to examine Hyde's type material. The discovery of two new species of this genus has provided additional incentive to rediagnose Hyde's misunderstood genus.

The abbreviations OSU, US, and CMNH refer to the Ohio State University, University of Illinois at Urbana-Champaign, and the Carnegie Museum of Natural History, respectively.

SYSTEMATIC PALEONTOLOGY

Order Spiriferida Waagen Suborder Spiriferidina Waagen Superfamily Reticulariacea Waagen Family Gerkispiridae, new family

Diagnosis.—Entirely costate, ovate to transverse reticulariaceans with short hingeline and moderately to well developed fold-sulcus; pedicle valve with short thin dental adminicula, low thin flaring stegidial plates, fine denticles in the outer lamellar layer of the interarea, and commonly with low apical myophragm; brachial valve interior with short tabellae and small striate cardinal process; micro-ornament consists of very fine uniramous hollow papillae or spinules that originate in the fibrous secondary shell layer; shell substance impunctate.

Genera assigned.—*Gerkispira* Carter, 1983, and *Punctothyris* Hyde, 1953.

Stratigraphic range.—Lower Mississippian (Tournaisian).

Remarks.—This new family is assigned to the Reticulariacea on the basis of well rounded lateral extremities, lack of true spiriferid denticulation (with taleolae in the secondary layer of the interarea of the pedicle valve), interior morphology, and micro-ornament of its con-

stituent genera. The entirely costate macro-ornament separates this group from other reticulariacean families.

Genus *Punctothyris* Hyde, 1953

1953. *Punctothyris* Hyde, Bull. Ohio Geol. Surv., 51:287–289, pl. 36, figs. 1–11.

1965. *Punctothyris* Hyde: Pitrat, Treatise on Inv. Paleont., Part H, Brachiopoda, p. H714, fig. 582, 1.

Type species. — *Punctothyris argus* Hyde, 1953, from the Logan Formation, Byer Member, Sciotoville, Ohio.

Other species assigned. — *Spirifer schucherti* Rowley, 1900, from the Lower Burlington white chert at Louisiana, Missouri; *Punctothyris inusitata* new species, from the Couteau Limestone in Marion County, Missouri; and *Punctothyris kenwoodensis* new species, from the St. Joe Limestone of Mayes County, Oklahoma, are readily placed here. *Reticularia? subrotundata* Hall of Girty (1899:557–558, pl. 70, figs. 7a, b) from the Madison Limestone in Montana probably belongs in this genus or in *Gerkispira* Carter. Girty compared his specimen with a species found in the lower Burlington Limestone of Pike County, Missouri, possibly referring to *P. schucherti* (Rowley). Girty's specimen is clearly not assignable to *Spirifer subrotundus* Weller (= *S. subrotundatus* Hall).

Diagnosis. — Small ovate to transverse reticulariaceans with rounded lateral extremities in all growth stages and well delimited fold-sulcus; both valves with a moderate number of simple rounded costae on the flanks and one to several simple costae in the sulcus or on the fold; sulcus bounding costae prominent and giving rise to lateral sulcal costae, when present, and occasionally to the nearest costae on the flanks; micro-ornament consisting of numerous fine hollow erect or semi-erect spinules or papillae that terminate within the fibrous secondary shell layer and fine growth lines; pedicle valve interior with slender short dental adminicula and short apical myophragm; brachial valve interior with very small cardinal process composed of a few longitudinal plates and short vertical tabellae; shell substance impunctate.

Comparisons. — The recently described genus *Gerkispira* Carter is similar to *Punctothyris* in most respects, but the latter can be readily differentiated by its less transverse outline, fewer costae, and well differentiated fold-sulcus. In micro-ornament and internal morphology the two genera are almost identical.

Few other spiriferacean or reticulariacean genera are closely similar to those of the Gerkispiridae. The Middle Devonian genus *Elythyna* Rzhonsnitskaya, 1952, possesses slightly rounded lateral extremities, low wide simple plications on the flanks, and has a micro-ornament consisting of fine long spinules or papillae. Internally the pedicle valve

is similar to *Punctothyris* but the brachial valve interior presumably lacks tabellae. *Elythyna* is much larger and has more weakly impressed macro-ornament than *Punctothyris*.

Oiosia Cooper and Dutro, 1982, from the Box Member of the Percha Formation of New Mexico (Late Famennian), is similar in size, outline, internal morphology and micro-ornament to *Punctothyris*. It differs in having a non-costate fold-sulcus and the ribs on the flanks are weakly or sometimes obscurely developed.

The ribbing on the fold-sulcus of *Punctothyris schucherti* and *P. argus* is not strongly developed, consisting of a single medial costa in the sulcus of *P. schucherti* and one to four obscure costae in the sulcus of *P. argus*. It is possible that *Punctothyris* and the Gerkispiridae arose from a progenitor with a non-costate fold-sulcus such as *Oiosia*.

Punctothyris argus Hyde, 1953

Figs. 1A–M; 2A–C

1953. *Punctothyris argus* Hyde, Bull. Ohio Geol. Surv., 51:288–289, pl. 36, figs. 1–11.

1965. *Punctothyris argus* Hyde: Pitrat, Treatise on Invert. Paleont., Part H, Brachiopoda, p. H714, fig. 582, 1.

Holotype. — OSU 12656 (H-540, incorrectly cited as H-500 in Hyde: 289). Collected by Hyde from the Byer Member of the Logan Formation at Sciotoville, Scioto County, Ohio.

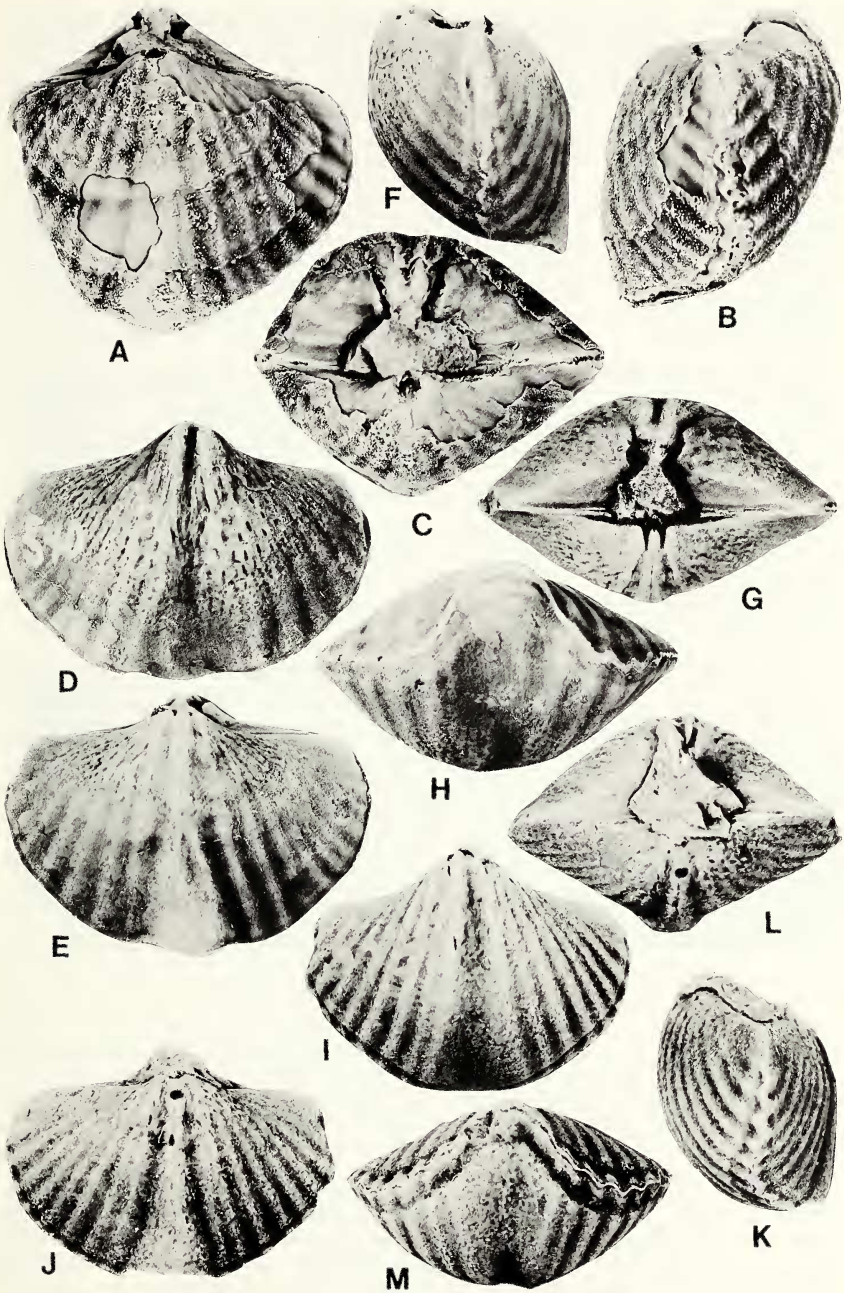
Paratypes. — OSU 12656 (H-542, 543, 545); the following designated paratypes are apparently lost: H-502, 504, 505, 507, 541, 544, and 546. All paratypes are from the same collection as the holotype.

Description. — Medium size for the family, subequally biconvex, with transversely subovate to subquadrate outline; maximum width attained slightly anterior to midlength; lateral profile sublenticular; lateral extremities rounded in all growth stages; anterior commissure uniplicate; fold and sulcus rather narrow, moderately developed, well defined; ornament consisting of 8 to 10 rounded costae on the flanks and one to four obscure costae in the sulcus; only those costae adjacent to the fold-sulcus may occasionally bifurcate; intercostal furrows of about the same amplitude and breadth as the costae; almost entire surface covered with tiny longitudinally ovate hollow papillae or spinules, roughly arranged in quincunx, which terminate within the secondary fibrous layer, leaving no indication of penetrating to the shell interior (see Figure 1A); shell substance impunctate.

Pedicle valve moderately inflated, slightly thicker than opposite valve; maximum

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Fig. 1.—*Punctothyris argus* Hyde. A–C, dorsal, lateral and posterior views of a large incomplete paratype, O.S.U. 12656 (H-545), note the smooth internal mold in areas where the secondary shell layer is missing; D–H, ventral, dorsal, lateral, posterior, and anterior views of the holotype, a steinkern, O.S.U. 12656 (H-540); I–M, ventral, dorsal, lateral, posterior, and anterior views of a paratype, O.S.U. 12656 (H-543), a steinkern with small amounts of shell material preserved at the two beaks; all $\times 3$.



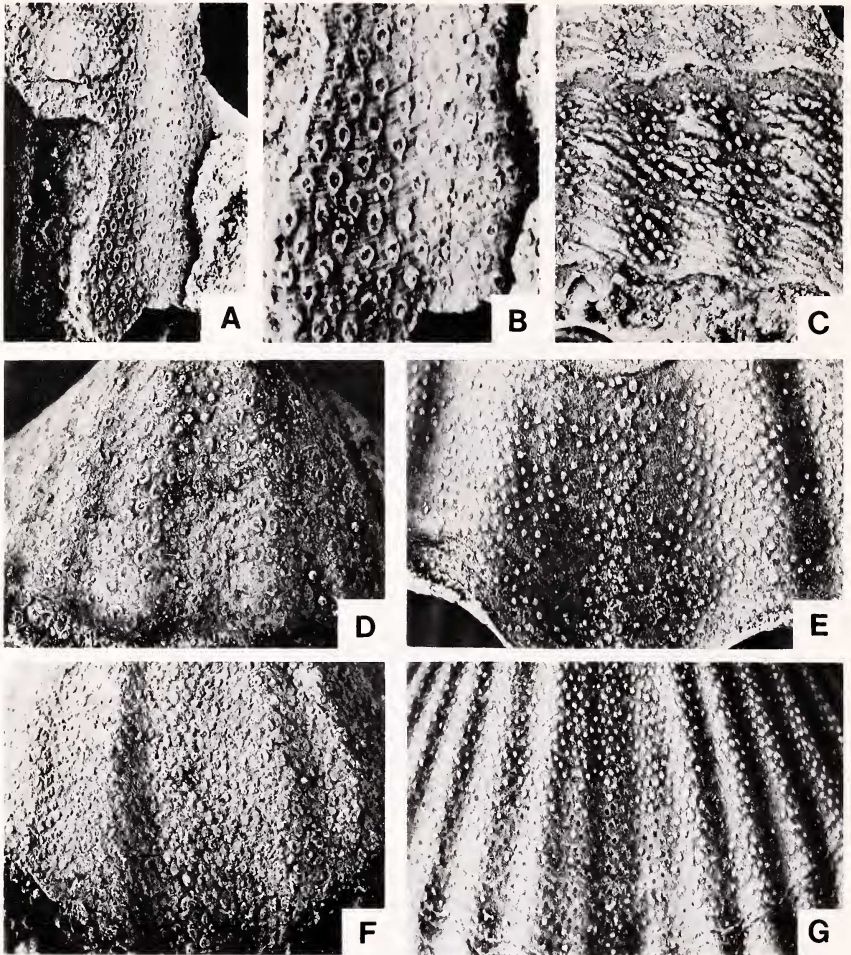


Fig. 2.—Micro-ornament of the genus *Punctothyris*. A–C, *Punctothyris argus* Hyde; A, B, enlargements of the hollow spinule bases of paratype O.S.U. 12656 (H-542), $\times 10$ and $\times 22$, respectively; C, enlargement of molds of the hollow spinule bases on paratype O.S.U. 12656 (H-545), $\times 10$. D, F, *Punctothyris schucherti* (Rowley); D, paralectotype Univ. Illinois RX-25A, a pedicle valve; F, a pedicle valve, CMNH 34497; both $\times 10$. E, *Punctothyris kenwoodensis*, new species, paratype CMNH 34492, $\times 10$. G, *Punctothyris inusitata*, new species, holotype CMNH 34495, $\times 10$.

thickness attained in umbonal region posterior to midlength; umbonal region moderately inflated; flanks moderately convex medially, sloping evenly to lateral margins; cardinal extremities slightly compressed, rounded; beak small, narrow, slightly incurved; internal molds suggest that interarea was low, acutely triangular, apsacline; no indication of denticulation preserved on types; delthyrium about as wide as high, definitive indication

of stegidial plates lacking in types; sulcus originating in beak, remaining moderately narrow, shallow, and rounded throughout; sulcus moderately well delimited from flanks; sulcus-bounding costae uniform throughout, occasionally giving rise to lateral sulcal costae; costae near cardinal extremities very faint; sulcal costae often faint, highly variable in development.

Pedicle valve interior with short stout diverging dental adminicula and a low rounded median ridge or myophgram in the umbonal region; muscle field moderately impressed; ovarian pits well developed anterolaterally to the muscle field in the holotype.

Brachial valve moderately convex but thinner than the pedicle valve, with the maximum thickness attained near midlength of the valve; umbonal region moderately swollen, not projecting much posterior to the hingeline; flanks curving evenly to the lateral margins, cardinal extremities slightly compressed; beak small, incurved; dorsal interarea low, slightly concave, anacline; fold originating in the umbonal region, remaining low until anterior to midlength, then rising moderately to form lateral profile nearly parallel to the lateral margin; fold well delimited throughout by fold bounding furrows which are more deeply incised than those on the flanks; ornament similar to that of the opposite valve.

Brachial valve interior with a very small striate cardinal process composed of five or six vertical plates; inner socket ridges fused with the crural bases, forming short stout vertical tabellae; adductor impressions obscure but a very thin low myophgram extends from near the base of the cardinal process to about midlength; brachidial details unknown.

Hyde (1953:289) presented accurate measurements of the holotype and the three best preserved paratypes.

Distinguishing characters.—This species is characterized by its transverse outline with 8 to 10 costae on the flanks and one to four costae in the sulcus.

Comparisons.—The other three species assigned to this genus can be differentiated in the following manner. *Punctothyris schucherti* (Rowley) is much smaller with a subovate outline and only six lateral costae and one in the sulcus. *Punctothyris kenwoodensis*, new species, is about the same size as *P. argus* but has an ovate outline, a more inflated profile in large specimens, 8 to 11 lateral costae and zero to three costae in the sulcus. *Punctothyris inusitata*, new species, is much smaller, has a less transverse outline, 13 lateral costae and three to five sulcal costae.

Occurrence and abundance.—Hyde's types are the only collection of this species of which I am aware. His specimens came from the Byer Member of the Logan Formation near Sciotoville (Sciotoale), Scioto County, Ohio. The age of the Logan Formation is in dispute. Although Stockdale (1939:228) indirectly suggested that the Logan Formation was of Keokuk age, Rodriguez (in Root et al., 1961:56) proposed that the Logan was no younger than Burlington in age. Manger (1971:34) concluded that the Logan was Kinderhookian in age, based on his study of the ammonoid fauna. Discovery of conodonts in the Rushville Formation by Thompson et al. (1971:704–711) conclusively limits the Logan to being no younger than Fern Glen or Early Osagian. Although the underlying Cuyahoga brachiopods appear to have strong Late Kin-

Table 1.—*Measurements (mm) of the type specimens of Punctothyris schucherti.*

Number	Length	Width	Thickness
U.I.RX 25D	8.7	9.5	6.3+
U.I.RX 25	7.9	7.6+	5.0+
U.I.RX 25A	5.3	6.9	3.2
U.I.RX 25C	5.2+	5.2+	3.5+
U.I.RX 25B	3.8+	3.8+	2.3+

derhookian affinities, the Logan brachiopods are too endemic to be of much biostratigraphic value.

Punctothyris schucherti (Rowley, 1900)

Figs. 2D, F; 3H–N; 4

1900. *Spirifer schucherti* Rowley, American Geologist, 25:261–262, pl. 5, figs. 15–17, 59.

1914. *Spiriferella? schucherti* (Rowley): Weller, Monogr. Illinois Geol. Surv., 1:416–418, pl. 35, figs. 59–63.

1941. *Spiriferella? schucherti* (Rowley): Butts, Bull. Virginia Geol. Surv., 52:220, pl. 124, figs. 25, 26.

Lectotype (designated herein).—University of Illinois RX-25D; from the lower Burlington white chert at Louisiana, Pike County, Missouri. This is the largest and by far the best preserved of Rowley's syntypes and is probably the same specimen figured by Weller (1914:pl. 35, figs. 59–63).

Paralectotypes.—University of Illinois RX 25, 25A, 25B, 25C. All are from the same collection as the lectotype.

Distinguishing characters.—This species can be differentiated by its small size (Table 1), subovate outline, six lateral costae, and a single median costa in the sulcus.

Comparisons.—The distinctions between this species and the type species of the genus, *P. argus*, are pointed out in the above discussion of that species. *P. kenwoodensis*, new species, from the St. Joe Limestone of Oklahoma, is of about the same age as *P. schucherti*. It differs in being much larger with a more ovate outline, a more inflated lateral profile, 8 to 11 lateral costae, and commonly three costae in the sulcus. In addition, *P. kenwoodensis* has a much broader umbonal region, less compressed cardinal extremities, and a more inflated brachial valve. In specimens of comparable size, the broad ventral umbo and slightly more numerous ribs on the flanks and often in the sulcus and more evenly rounded outline of *P. kenwoodensis* allow discrimination of the two species. *P. inusitata*, new species, from the Chouteau Limestone of northeastern Missouri, is slightly larger than *P. schucherti* but is similar in outline and development of a narrow ventral umbo. How-

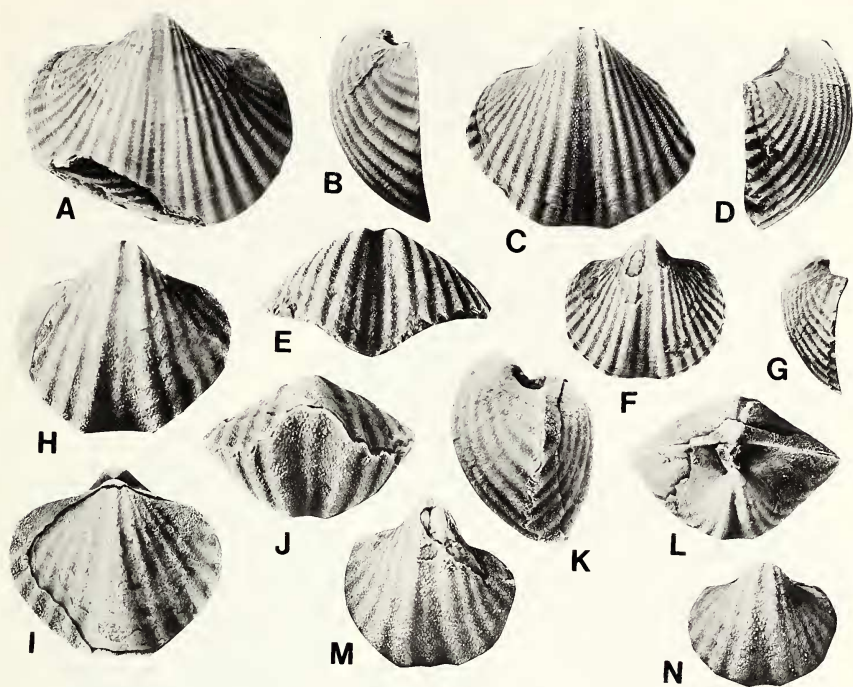


Fig. 3.—A–G, *Punctothyris inusitata*, new species; A, B, ventral and lateral views of a large pedicle valve paratype, CMNH 34494; C–E, ventral, lateral, and anterior views of a medium pedicle valve, the holotype, CMNH 34495; F, G, ventral and lateral views of a small pedicle valve paratype, CMNH 34496; all $\times 3$.

H–N, *Punctothyris schucherti* (Rowley); H–L, ventral, dorsal, anterior, lateral, and posterior views of the lectotype, Univ. Illinois RX-25D; M, a small elongate pedicle valve, CMNH 34497; N, a small pedicle valve paralectotype, Univ. Illinois RX-25A; all $\times 3$.

ever, *P. inusitata* can be readily differentiated by its more numerous costae on both the flanks and sulcus.

Remarks.—Although Weller's excellent description of the exterior morphology of this species scarcely needs repeating some additional information concerning the nature of the ornament, shell structure, and internal morphology has come to light. Weller (1914:417) was incorrect in stating that *P. schucherti* is punctate. Although he did not describe the structures he interpreted as punctae, one may assume he was referring to the bases of the hollow spinules or papillae that characterize this genus and which extend into the secondary layer of the shell.

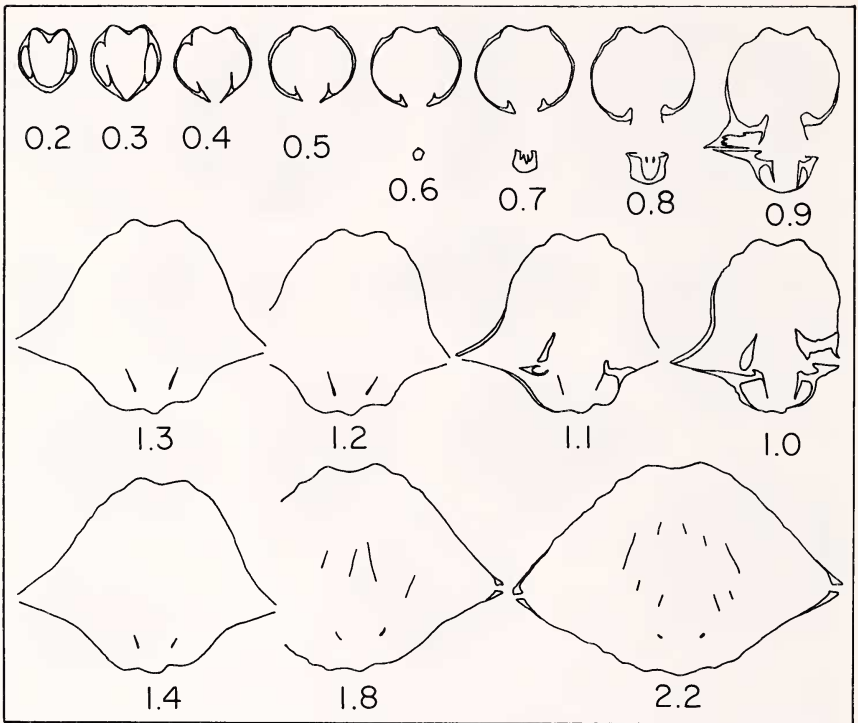
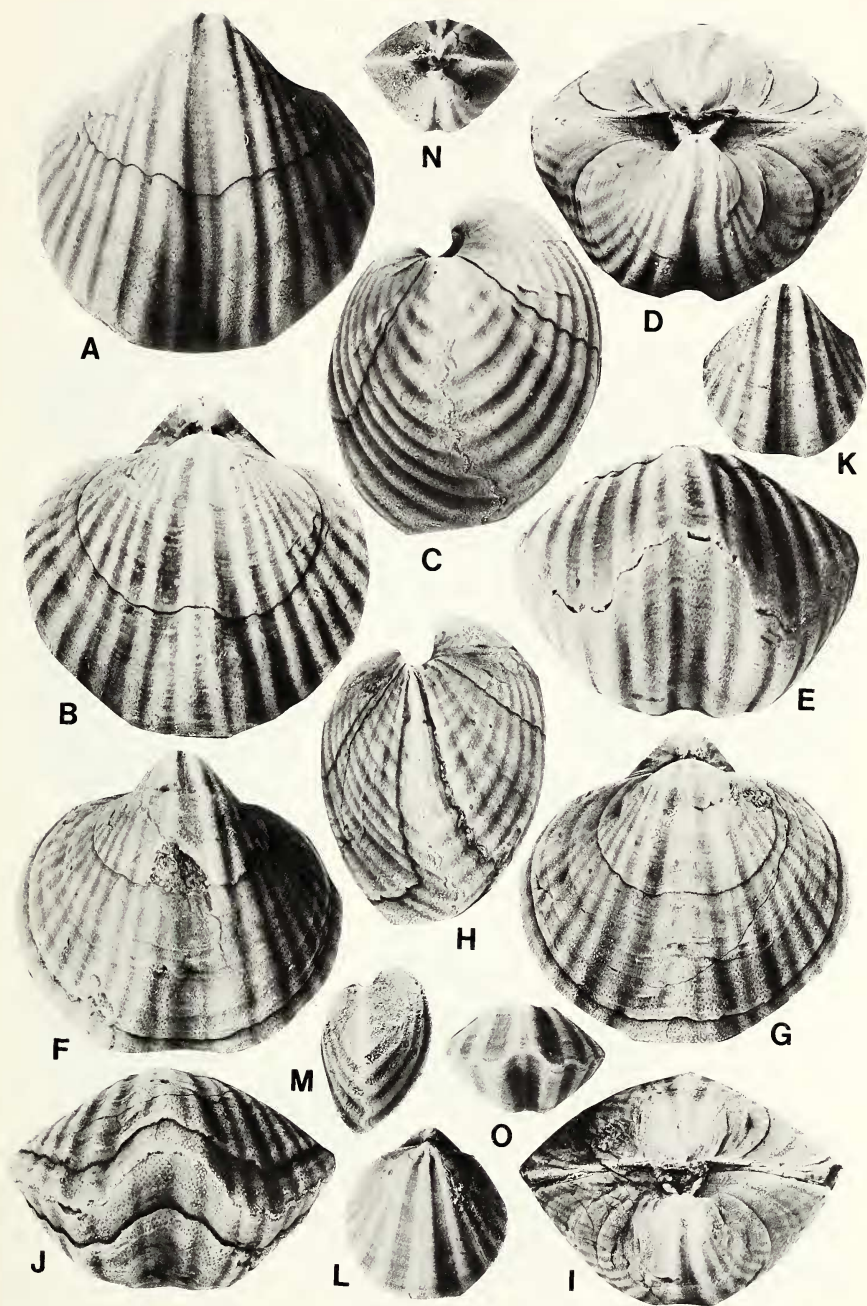


Fig. 4.—Transverse serial sections of *Punctothyris schucherti* (Rowley). An R. R. Rowley Collection specimen from the white chert of the Lower Burlington Limestone at Louisiana, Pike County, Missouri, Univ. Illinois X-6352, $\times 6$. Section numbers refer to distance in millimeters from the ventral beak.

The interior morphology of this species can be ascertained from transverse serial sections as seen in Fig. 4. The interior of the pedicle valve possesses very short thin dental adminicula. A short low myophragm is confined to the beak region. Also note the thin outwardly flaring stegidial plates that appear 0.8 mm from the posterior tip of the beak. In the brachial valve, the cardinal process is exceptionally small

Fig. 5.—*Punctothyris kenwoodensis*, new species; part of a growth series of seven specimens (also see Fig. 6); A–E, ventral, dorsal, lateral, posterior, and anterior views of the holotype, CMNH 34485; F–J, ventral, dorsal, lateral, posterior, and anterior views of a large paratype, CMNH 34486; K–O, ventral, dorsal, lateral, posterior, and anterior views of a small paratype, CMNH 34490; all $\times 3$.



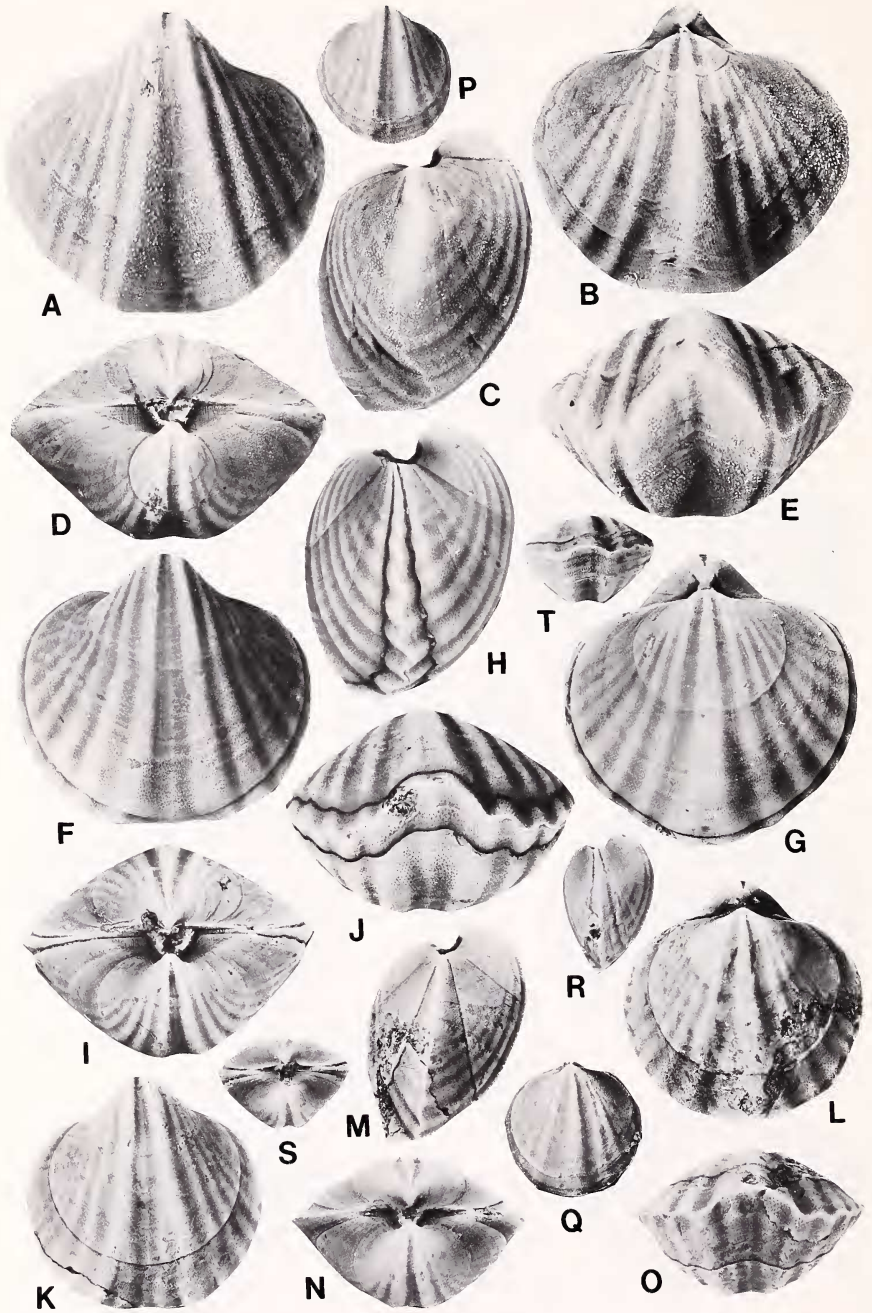


Table 2.—Measurements in millimeters of the types of *Punctothyris kenwoodensis*.

CHMN number	Length	Width	Thickness
34485	15.7	15.4	12.7
34486	14.0	14.9	10.3
34487	13.4	14.1	9.4
34488	12.8	12.9	9.4
34489	10.6	10.3	6.8
34490	7.7	7.2	5.0
34491	6.2	5.9	4.0

and composed of only two longitudinal plates in this specimen. The crural bases are fused to the inner socket ridges and descend almost vertically to the floor of the valve, forming short thin tabellae. The spiral brachidium consists of at least three whorls per spire.

Occurrence and abundance.—This is a very rare species in the Lower Burlington Limestone of Pike County, Missouri. It seems to be restricted to the *Cryptoblastus* Zone or white chert beds. Rowley's dozen or so specimens, including types, are in the collections of the University of Illinois. Butts (1941) illustrated a specimen of this species from the Price Formation of Virginia. The author has collected several mostly poorly preserved specimens from the white chert beds at the Louisiana City Quarry, Pike County, Missouri.

Punctothyris kenwoodensis, new species

Figs. 2E, 5–7

Holotype.—CMNH 34485. Collected by the author from the St. Joe Limestone near Kenwood, Mayes County, Oklahoma.

Paratypes.—CMNH 34486–93, all from the same collection as the holotype.

Description.—Medium size for the family, strongly and subequally biconvex, with subovate outline; maximum width attained near midlength; lateral profile sublenticular to guttate; lateral extremities well rounded in all growth stages; anterior commissure uniplicate; fold and sulcus narrow, moderately developed, but usually well defined; ornament consisting of 8 to 11 rounded costae on the flanks and zero to three in the sulcus; bifurcations limited to lateral sulcal costae and occasionally sulcus or fold-bounding costae; intercostal furrows about the same width as the costae or slightly narrower; surface covered with tiny hollow papillae or spinules, crudely arranged in quincunx, and which terminate in secondary shell layer; shell substance impunctate.

Pedicle valve strongly and evenly inflated in large specimens, slightly thicker than

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Fig. 6.—*Punctothyris kenwoodensis*, new species; part of a growth series of seven specimens (also see Fig. 5); A–T, ventral, dorsal, lateral, posterior, and anterior views of four paratypes, CMNH 34487–9, 34491; all $\times 3$.

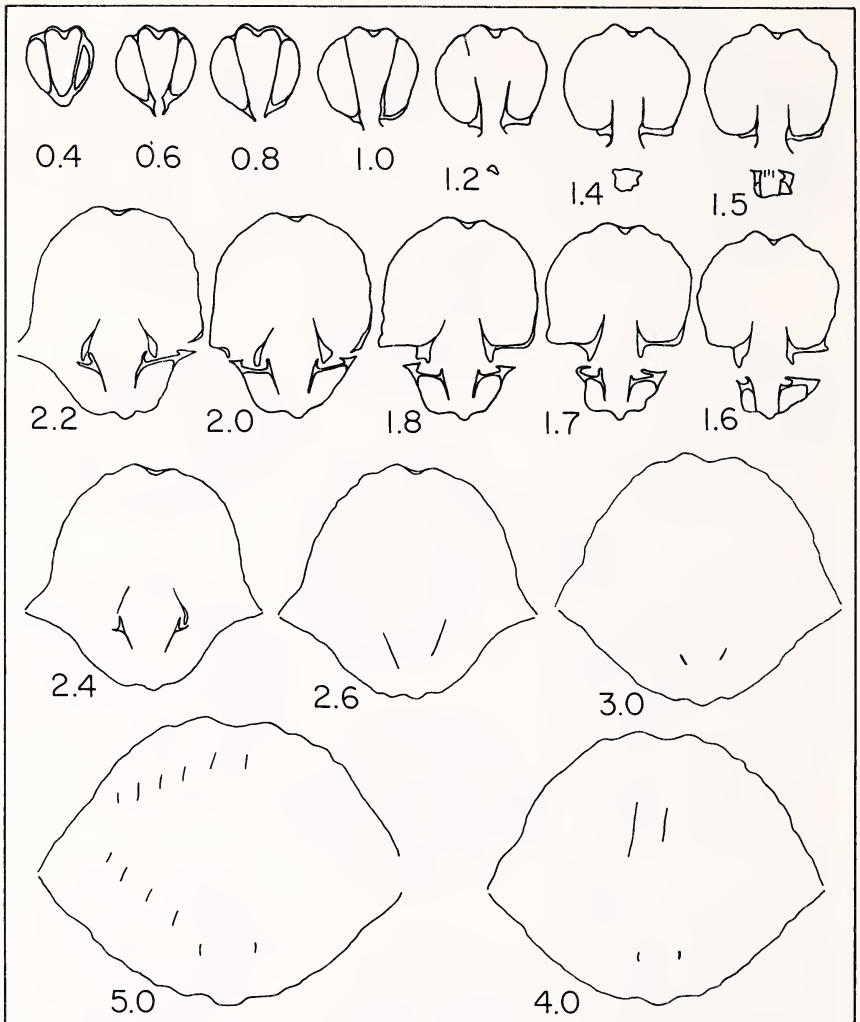


Fig. 7.—Transverse serial sections of *Punctothyris kenwoodensis*, new species, paratype CMNH 34493, $\times 4$. Section numbers refer to distance in millimeters from the ventral beak.

opposite valve; maximum thickness attained slightly posterior to midlength; umbonal region moderately inflated; flanks slightly convex in profile, sloping steeply to lateral margins; cardinal extremities slightly compressed, well rounded; beak small, incurved; delthyrium about as wide as high with outwardly flaring stegidial plates; sulcus originating in beak region, becoming gradually wider, deeper, and rounded anteriorly; sulcus-bounding costae variably developed, sometimes distinctly coarser than those of flanks, at other times less well differentiated; costae near lateral extremities very weak, obscurely de-

veloped; sulcal costae rarely lacking as in Fig. 5A, but a median costa is normally developed.

Pedicle valve interior with very short thin dental adminicula and a low medial myophragm that originates in the beak region and extends forward well beyond the dental adminicula; impression of muscle field not discernible in transverse sections; teeth of moderate size.

Brachial valve inflated in larger specimens but never quite as convex as opposite valve; maximum thickness attained near or slightly posterior to midlength; umbonal region moderately inflated, projecting posterior to the hingeline; dorsal beak inconspicuous, incurved; dorsal interarea low, anacline; fold originating in umbonal region, rising gradually anteriorly to form moderately developed rounded fold; fold well delimited from flanks by fold-bounding furrows; ornament similar to that of opposite valve.

Brachial valve interior with very small striate cardinal process composed of three or four vertical plates; crural bases fused with inner socket ridges to form short thin nearly vertical tabellae; adductor impressions not discernible in transverse section; spiralia composed of at least six whorls.

Distinguishing characters.—This species is characterized by its ovate outline, medium size (Table 2), with 8 to 11 costae on the flanks, and zero to three costae in the sulcus.

Comparisons.—The differences between this species and *P. argus* Hyde and *P. schucherti* (Rowley) are discussed above under those species. *Punctothyris inusitata*, new species, differs from *P. kenwoodensis* in being smaller, having a more transverse outline, a narrower less inflated ventral umbonal region, and 13 lateral costae.

Occurrence and abundance.—This species is based on a single collection of 34 specimens from the steeply dipping flank beds of an abandoned quarry in a small bioherm in the St. Joe Limestone near Kenwood, SE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 11, T.21 N., R.21 E., Mayes County, Oklahoma. The diverse brachiopod fauna from this bioherm points to a correlation with the Fern Glen Fm.—Dolbee Creek Limestone interval in the Mississippi Valley region.

Punctothyris inusitata, new species

Figs. 2G, 3A–G

Holotype.—CMNH 34495. Collected by the author from the Chouteau Limestone near Warren, Marion County, Missouri.

Paratypes.—CMNH 34494, 34496, from the same collection as the holotype.

Description.—Smaller than average for the family, with transversely subovate outline; maximum width attained at about midlength; lateral extremities rounded in all growth stages; anterior commissure uniplicate; sulcus narrow, moderately developed, well defined; ornament consisting of 13 simple rounded costae on the flanks and three or four costae in the sulcus, the median costa rarely bifurcating; lateral sulcal costae bifurcate from fold-bounding costae; rarely one lateral flank costa may bifurcate from sulcus-bounding costa; intercostal furrows narrower than costae; almost entire surface covered with densely spaced very fine hollow papillae or spinules, roughly arranged in quincunx; shell substance impunctate.

Table 3.—*Measurements in millimeters of the types of Punctothyris inusitata.*

CMNH number	Length	Width	Thickness
34494	±9.8	12.3	±4.6
34495	9.1	±10.7	±4.2
34496	6.7	7.9	±3.6

Pedicle valve moderately inflated with maximum thickness attained slightly posterior to midlength; umbonal region moderately inflated; beak small, narrow, incurved, projecting posterior to hingeline; flanks moderately convex, sloping evenly to lateral margins; cardinal extremities rounded, slightly compressed, interarea of moderate height, narrow, triangular, weakly concave, catacline to slightly apsacline, with weak faint vertical striae on the primary layer; delthyrium about as wide as high; stegidial plates thin, short; sulcus originating in beak region, becoming gradually deeper and rounded anteriorly; sulcus moderately well delimited from flanks; lateral costae becoming finer and indistinct laterally.

Pedicle valve interior with short thin dental adminicula; other details not observed. Brachial valve unknown.

Distinguishing characters.—This species is characterized by its transversely ovate outline with 13 costae on the flanks and three or four in the sulcus, the median costa rarely bifurcating.

Comparisons.—The differences between this species and the other three species described in this paper are noted above. Table 3 gives measurements of this species.

Remarks.—Although the lack of dorsal interiors obviates an absolutely certain generic assignment, I have little doubt about placing this new species in the genus *Punctothyris*. Repeated collecting attempts to find brachial valves or additional specimens of any kind have failed. The macro- and micro-ornament leave no doubt that this is a new species and of special interest because of its occurrence in Kinderhookian strata.

Occurrence and abundance.—The above description is based on a single collection of only six pedicle valves, the three best of which are illustrated herein. These specimens were collected by the author from a roadcut in the Chouteau Limestone about one mile south of Warren, NW ¼, SE ¼, Sec. 2, T.57 N., R.8 W., Marion County, Missouri.

ACKNOWLEDGMENTS

I thank Profs. Stig Bergstrom and D. B. Blake for the loan of type materials in their care. Albert Kollar expertly prepared the serial sections of *Punctothyris kenwoodensis*. J. T. Dutro, Jr., and R. D. Hoare made useful suggestions for the improvement of this paper for which I am most grateful.

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